

## Abstract

In order to provide a single common cost-efficient architecture for real time communication services for audio, video, and data over internet protocol, a voice over internet protocol (VoIP) system and architecture is provided by placing border elements (BEs) at the interface boundaries between the access network the user devices use and the VoIP infrastructure. The BEs use SIP protocol as the access call control protocol over any access networking technologies, for example, IP, Ethernet, ATM, and FR, and provides all services transparently to the end users that use SIP-enabled devices.

To enable a scalable system, the SIP BEs are decomposed into separate communicating entities that make the SIP BE scalable and provide new capabilities not previously available by a self-contained SIP BE. Further, multiple levels of decomposition of a SIP BE can be provided by the present invention supporting a flexible and scalable SIP BE design that further improves system efficiencies and cost advantages as compared to use of single integrated border or edge elements. Further, a scalable SIP BE, made up of a plurality of physical entities for optimization of a large scale design, acts as a single integrated functional entity to logically execute a set of functions at the border of a VoIP infrastructure.